

AMENDMENTS TO THE CLAIMS

Please cancel claims 1-34.

35. (Currently Amended) ~~The method of claim 34~~ A method of switch fabric protection comprising:

simultaneously launching parallel duplicate data streams through two duplicated substantially identical switch fabrics, including launching a first data stream through a first switch fabric comprising a first N x M crossbar switch, and launching a substantially identical second data stream through a second switch fabric comprising a substantially identical second N x M crossbar switch, wherein N is the number of ingress ports and M is the number of egress ports of each respective N x M crossbar switch;

receiving said parallel duplicate data streams after passing simultaneously through said first and said second switch fabric;

examining said received duplicate data streams in accordance with predetermined selection criteria;

if either of said duplicate data streams satisfies said criteria and the other said duplicate data stream does not satisfy said criteria, then selecting said duplicate data stream that satisfies said criteria and discarding said duplicate data stream that does not satisfy said criteria; and

if both of said duplicate data streams satisfy said criteria, then arbitrarily selecting one of said duplicate data streams and arbitrarily discarding the non-selected duplicate data stream;

wherein said switch fabrics transmit said data streams encapsulated in fixed sized chunk payloads, wherein said duplicate data streams comprise duplicate sequences of data structures, wherein said data structures are said fixed sized chunk payloads, wherein said data structures are encapsulated before said launching with a code selected from the group consisting of forward error correction code and cyclic redundancy code, and wherein said selecting of said data stream is performed on a structure-by-structure basis in accordance with said code encapsulated with said data structure.

36. (Original) The method of claim 35 wherein said encapsulated code is stripped away from said data structure after said selecting.

37. (Currently Amended) The method of claim 35 ~~32~~ wherein data delivery by said data streams is not interrupted by an occurrence selected from the group consisting of malfunction, failure, removal, and replacement of one of said two duplicated substantially identical switch fabrics.

38. (Currently Amended) The method of claim 35 ~~32~~ wherein said examining is performed at an egress internal optics module interconnected with an egress port of each of said duplicated substantially identical switch fabrics

39. (Original) The method of claim 38 wherein said selecting and said discarding are performed at an egress packet forwarding module interconnected with said egress internal optics module.

40. (Original) The method of claim 36 wherein said encapsulated code is stripped away at an egress internal optics module.

41. (Currently Amended) The method of claim 35 ~~34~~ wherein said data structures are encapsulated at an ingress internal optics module.

42. (Currently Amended) The method of claim 35 ~~32~~ wherein N is equal to M.

43. (Currently Amended) The method of claim 35 ~~32~~ wherein N is not equal to M.

44. (Original) The method of claim 42 wherein N is greater than 10.

45. (Original) The method of claim 44 wherein N is greater than 40.

46. (Original) The method of claim 45 wherein N is greater than 60.

47. (Original) The method of claim 43 wherein N and M are each greater than 10.

48. (Original) The method of claim 47 wherein N and M are each greater than 40.

49. (Original) The method of claim 48 wherein N and M are each greater than 60.

50. (Currently Amended) The method of claim 35 ~~32~~ wherein said crossbar switches are optical switches.

51. (Currently Amended) The method of claim 35 ~~32~~ wherein each of said crossbar switches passes information at a data rate of approximately 12.5 gigabits per second.

52. (Currently Amended) The method of claim 35 ~~32~~ wherein said first and said second switch fabric are incorporated into a router system.

53. (Original) The method of claim 38 wherein said egress internal optics module is interconnected with said egress port through an optical fiber.

54. (Original) The method of claim 41 wherein said ingress internal optics module is interconnected with said ingress port through an optical fiber.

55. (Original) The method of claim 35 wherein said forward error correction corrects errors in said data structures.

56. (Original) The method of claim 35 wherein said forward error correction detects uncorrectable errors in said data structures.

57. (Canceled)

58. (Currently Amended) The method of claim 66 ~~57~~ wherein said switch fabric comprises multiple duplicated switch fabrics.

59. (Currently Amended) The method of claim 66 ~~57~~ wherein said first module is selected from the group consisting of optical switch modules and internal optics modules.

60. (Currently Amended) The method of claim 66 ~~57~~ wherein said second module is selected from the group consisting of optical switch modules and internal optics modules.

61. (Currently Amended) The method of claim 66 ~~57~~ wherein said first module and said second module are the same module.

62. (Currently Amended) The method of claim 66 ~~57~~ wherein said predetermined criteria comprise forward error correction.

63. (Currently Amended) The method of claim ~~66~~ ~~57~~ wherein said switch fabric comprises an optical crossbar switch.

64. (Currently Amended) The method of claim ~~66~~ ~~57~~ wherein said predetermined data path comprises an optical fiber cable.

65. (Canceled)

66. (Currently Amended) ~~The method of claim 65~~ A method of fault isolation and diagnostics in a switch fabric comprising:

launching a non-traffic-bearing data structure on a predetermined data path through said switch fabric from a first module interconnected with said switch fabric;

detecting and receiving said non-traffic-bearing data structure at a predetermined second module interconnected with said switch fabric;

examining said received non-traffic-bearing data structure in accordance with predetermined criteria;

if said non-traffic-bearing data structure satisfies said criteria, then determining that said predetermined data path is error-free; and

if said non-traffic-bearing data structure fails to satisfy said criteria, then determining that said predetermined data path is faulty;

wherein said switch fabric transmits data encapsulated in fixed sized chunk payloads, wherein said non-traffic-bearing data structure is a substantially fixed size diagnostic chunk, and wherein identifications representing physical identities of said respective first module and of said second module are encoded into said diagnostic chunk prior to said launching;
and

said predetermined criteria comprise coincidence between the physical identities of said respective first and second modules and said respective encoded identifications of said first and second modules.

67. (Currently Amended) The method of claim ~~66~~ ~~57~~ wherein said switch fabric, said first module, and said second module are incorporated within a router system.